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Prevalence of occupational stress and workload among laboratory staff

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ABSTRACT

Job stress is the detrimental physical and emotional responses that might occur when there is conflict between the expectations of a job and an employee's ability to meet those needs. Workplace stress is a global primary risk factor for worker health and diminishes workers' motivation and productivity. A cross-sectional study was conducted involving 133 randomly selected laboratory staff from both private and government sectors in Johor, Malaysia. Descriptive analysis was conducted to establish the relationship between stress scores and the work burden of laboratory staff. The results indicate that 74% of the respondents have more than eighty percent stress scores. Cross tab demonstrates that there is an association between total staff and average patient daily and overall stress score (p-value <0.01). Pearson correlation shows a positive correlation between workplace environment and overall stress scores (p-value <0.01). The research indicates that work stress is a prevalent issue among laboratory staff. The well-being of laboratory staff is strongly connected to organisational success. Consequently, lab Staff, particularly those working in busy laboratories, should be highly prioritised.

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1. INTRODUCTION

Human civilisation has entered the information age, and the 21st century is full of opportunities and problems. People must contend with a range of severe competition, and professional stress is nearly omnipresent [1]. Occupational stress is the process by which psychological experiences and demands (stressors) in a job causes short- and long-term mental and physical health effects (stress). Without laboratory testing, the practice of contemporary medicine would be impossible. Each laboratory has its own unique environment and risks, which each supervisor/principal investigator must consider while creating suitable work procedures [2]. In addition to responsibly conducting their work, laboratory staff must also take all required steps to safeguard themselves and others from exposure to dangerous chemicals [3]. The importance of laboratory testing to identify and diagnose illnesses and treat patients cannot be overstated. Laboratory tests aid in diagnosing the existence, severity, or absence of diseases and monitoring the efficacy of treatment. Between 60% to 70% of all choices involving diagnosing and treating patients, as well as hospital admission and discharge, are based on laboratory test findings [4]. Therefore, stress among laboratory staff can be readily diagnosed by the following symptoms: sickness, absence, grave negligence, and clinical

mistakes are frequently related to employment. Work-related stress is ubiquitous in most laboratories because of inadequate staffing, unrealistic objectives or targets, long working hours, exposure to contagious illnesses and dangerous chemicals, the potential of malpractice, litigation, and other variables relating to specific areas of work [5]. If personal life problems become too great and overwhelming, these might result in stressful situations that appear in employees' work.

Laboratory staff are allied health professionals who play a crucial part in the health care community [6]. Clinical and medical staff are often known as clinical laboratory technologists and medical laboratory technicians, respectively. Clinical laboratory technologists and technicians are highly skilled individuals with specialised academic and clinical training in laboratory science [7]. These individuals work in the clinical laboratory department of health care organisations, such as haematology, clinical chemistry, microbiology, immunohematology, immunology, and flow cytometry. They perform various complex tests on tissue, blood, and other body fluids. These individuals offer the medical team vital information required for the diagnosis, prognosis, and management of diseases clinical laboratory directors and supervisors are crucial in providing leadership, strategic direction, and oversight and control of laboratory departments' everyday operations [8]. The clinical laboratory has been referred to as a "hidden profession" because laboratory professionals frequently operate behind the scenes in health care with minimal patient interaction and are, therefore, seldom visible to the public [9]. However, the laboratory is an essential component of patient care, and as physicians and nurses rely more on diagnostic testing to make medical choices, the shortage of skilled laboratory employees poses a substantial threat to correct patient diagnosis and prompt patient treatment.

Globally, stress poses a significant threat to the physical and mental health of workers as well as the organisation's health. If stress is not managed, it can cause workers to lose interest in their tasks, resulting in unproductive and worthless outputs [10]. The WHO estimates that there are 160 million work-related ailments, including 16% back pain, 10% hearing loss, and one death every ten and a half minutes due to depression. Both employees and employers are becoming increasingly concerned about stress related to the workplace and working circumstances. The Global Organization for Stress Statistics reports that job stress among adults remains rising [11].

It is believed that job stress occurs when there is a mismatch between the employee's talents and abilities and the pressures and demands of the workplace [12]. It may be conceptualised as a disruption of the balance between the demands placed on employees and the resources provided to them [13]. Individuals experience unfavourable situations that limit their well-being when workplace demands exceed or fall below resources [14]. Job stress may result in diminished health [15]. Positive effects of employment resources may improve well-being; if the effort levels raise expenses, job expectations may become job stress [16]. These significant expenses may result in melancholy, worry, and exhaustion. Occupational resources are physical, psychological, social, or organisational facets of a position that might lessen job demands and the related psychological and physical costs. These are important for attaining professional objectives or fostering personal growth and development. Not only can workplace resources aid in meeting job needs, but they are also essential in and of themselves. Job satisfaction is a pleasant or positive emotional state brought on by job experience or evaluation [17]. This covers compensation, work relationships, working conditions, job security, the potential for advancement, training opportunities, and the nature of the job. Furthermore, these various facets of job satisfaction appear to be associated [18].

Laboratory staff are independent and exact. They are problem-solvers who not only provide accurate results but also recognise when results are inaccurate and must be rechecked. Although they spend less time with patients than physicians and nurses, medical laboratory staff are as committed to patients' health. As essential health care team members, they play a crucial role in gathering the information necessary to provide the best possible treatment for a sick or injured patient. Laboratory staff need a range of sophisticated precision instruments and automated and electronic equipment. They must be precise, trustworthy, interested in science, and able to acknowledge their responsibility for human lives.

2. METHOD

A cross-sectional study was conducted among laboratory staff in the state of Johor, Malaysia. No monetary remuneration was offered to the participants, who were recruited using the convenience sample method. Google Template was used to invite respondents to join the survey, and social media networks such as WhatsApp and Twitter were utilised for communicating with respondents. Beginning the questionnaire was a brief overview of the study and an invitation to participate. Consent for the study was regarded as the completion of the online survey. The sample size was selected by Openepi and calculated using the most recent statistics to approximate the total number of laboratory staff in Johor, Malaysia. Since no prior evaluations have been done, a conservative estimate of 50% was used. The minimum required sample size for a 95% confidence interval with a 5% margin of error was 128. The sample size was increased because it was anticipated that many people would complete the online survey. A total of 40 questions as presented in

Table 1 on the Stress Risk Assessment Form in The Workplace Environment was provided to all respondents. The questionnaire was adopted from the Malaysian Occupational Healthcare worker guideline [19]. A score of less than 80% indicates that workplace environment and management may be contributing factors to workplace stress as shown in Table 2.

Table 1. Questions variables in risk assestment form

Variables	Questions
Workplace	14
Workstation	12
Work facilities	14
Total squestions	40

Table 2. Score description

Score	Description
>80 %	Workplace environment and management may not be a factor contributor to stress at work
<80 %	Workplace environment and management may be contributing factors to workplace stress

3. RESULTS AND DISCUSSION

The final sample of the study was 133 respondents. The respondents consisted of laboratory staff from private and government sectors in Johor, Malaysia. Based on Figure 1, most participants scored > 80% (74.56%) overall stress score. Based on Table 3, most of the laboratories have more than two staff (58.6%). Besides that, most of the laboratories examine >100 average patient specimens daily (107, 80.5%). A contingency table was created to investigate the association between the burden of staff and total stress score as shown in Table 4. By using the limit of 80% scores, the cross tab revealed that the total daily patient specimens were associated with stress scores. Table 5 shows the Pearson correlation between the overall stress score and other variables. The result shows that the mean workplace environment score positively correlates with the overall mean stress score (p-value <0.01).

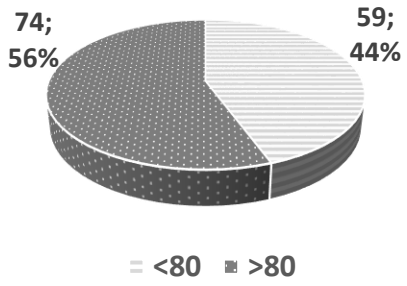

Figure 1. Overall stress score (N=133)

Table 3. Total burden of laboratory staff

Variables		Frequency	Mean	SD
Average staff daily	<2 staff	55 (41.4%)	0.59	0.043
	>2 staff	78 (58.6%)		
Average patient specimens daily	>100	107 (80.5%)	0.81	0.035
	<100	26 (19.5%)		
	>80	74 (55.6%)		

Table 4. Association between total staff and patients with overall stress score

Variables	R square	Durbin watson	B	p-value	95% confidence interval	
Average patient specimens daily	0.05	1.16	30.056	0.01	29.55	36.55
Average staff daily	0.013	1.736	4.783	0.09	2.802	6.763

Table 5. Pearson correlation

Stress score variables	Pearson correlation	p-value
Workplace environment	0.924	0.01
Workstation	0.674	0.06
Work facilities	0.857	0.08

The results show the prevalence of stress score is more than 80%, and Table 4 shows an association between the total daily patient specimens and overall stress score. An excessive workload may result in staff losing focus, negatively affecting their performance. Additionally, unresolved workload might impair concentration, leading to increased lab errors [20]. A person with an excessive workload will be physically overburdened, feel exhausted and lack sufficient energy to complete their tasks. Therefore, it may be concluded that the workload in laboratories is substantial. The number of years a laboratory employee has worked in the laboratory will affect their mental and intellectual health; the greater the staff's workload, the more likely their mental and intellectual illnesses may combine, increasing error rates. The mentality and intellect of depressed laboratory staff would diminish their work performance. According to Roslee [21], employees are given multiple tasks to do in a short period in large laboratories. Tight deadlines exert pressure on staff to accomplish their entire project. In addition, Idris [22] noted that the combination of deadlines and job overload exacerbates workplace stress. According to Sonna [23], the workload is a predictor of emotional weariness and increases occupational stress.

The result shows that the work stress score has a positive correlation with the workplace environment. The work environment is where employees engage in activities that can positively and negatively affect their ability to achieve their goals [24]. According to research, an uncomfortable atmosphere will reduce staff performance, such as productivity levels and employee morale, thereby affecting corporate objectives [25]. Unhealthy work conditions can cause employees to be disinterested in their work and arrive late. Conversely, if the work environment is healthy, employees will be enthusiastic at work, resistant to illness, and able to concentrate, thus so completing their work quickly and efficiently. Agencies must provide a comfortable and suitable work atmosphere that entices staff to perform efficiently [26]. The greater one's job satisfaction, the more favourable the evaluation of the work environment [27]. Employees who have a positive opinion of their work environment are more likely to remain in that setting, which establishes strong work loyalty.

Employers should prepare to enhance a supportive workplace environment and emphasise their commitment to reduce job stress among employees [28]. In addition, Employers should adopt supportive initiatives to alter organisational attitudes regarding job stress, create policies, and endeavour to eradicate the stigma associated with mental health in the workplace. Employers should attempt to determine which aspects of the job may contribute to job stress issues. To identify job stress issues inside a company, employers might collect information on staff turnover, employee absence due to illness, and employee performance statistics [29]. Employers should also include workers in the process of addressing job stress in the workplace. They will understand what the organisation has done effectively and what needs to be improved. They may also be able to offer employee-approved ideas for additional enhancements [14]. For management to alleviate the stress caused by the workload, it is possible to hire more people to distribute the burden, lessen the pressure on employees, and maybe meet deadlines [30]. Furthermore, organisations should give managers with appropriate training and support on how to handle their co-workers.This should enable the managers to seek appropriate help for their employees, ensuring that their welfare is a priority for the organisation and that the workers are completely supported [31]. It is essential to point the workers in the appropriate direction. A manager who knows when and how to access support for employees is advantageous to an organisation since it improves employee retention. Laboratories within a hospital benefit from the occupational health team and other on-site or organisation-wide services. In laboratories without onsite support facilities, however, additional emphasis should be made on providing the managers with the appropriate training [32].

Employees should be aware of how they may enhance and maintain their mental health—for example, by pursuing entertaining or beneficial extracurricular activities. Employees must also be able to recognise signals that they or their co-workers may have job stress issues [33]. They must seek assistance immediately and trust that their employer will do everything necessary to assist them. Employees should be aware of the mental health assistance and information resources available from their companies. Internal help, such as the Employee Assistance Program and Peer Support Group, may differ from external support offered by government entities or non-governmental groups [34]. When employees feel incompetent in their work, it cannot be assumed that this indicates a problem with the job or the employment. It is essential for the individual to meet the job requirements or to have a plan that helps them bridge the gap between the job requirements and their current capability [35]. When this is the case, there should be no issue, as employees

will build and acquire techniques to deal with short-term stress so that they do not feel pressured over the long run. Employees with concerns about their well-being should not be afraid to discuss them with their employers [36]. This willingness to disclose one's burden stems from the belief that such information is confidential, facilitating staff help. A fundamental part of effective management is listening to and comprehending the employees' concerns. The manager must demonstrate empathy and a willingness to address concerns, as well as a willingness to seek additional support.

It is recommended that, in the future, other researchers can identify and investigate variables that were not addressed in this study. The sample size may be raised beyond 133 respondents. This study was conducted at an opportune time, according to the researcher, who employed the current workload and other societal elements that influence working professionals. Despite employees' workload, this factor did not appear to affect their performance significantly. Future researchers can also expand the scope of this study and identify additional variables that influence employee performance to produce more accurate analytical results.

4. CONCLUSION

This study aimed to determine the effects of occupational stress on Malaysian laboratory staff. According to the results, workload affects employee job stress. Employing a qualified workforce in laboratories and work environments, improving working conditions for employees, and controlling the prevalence of workplace stress can be facilitated by the findings of this study. Future studies must conduct additional research on this topic to elucidate the factors affecting the work speed and accuracy of people and other parameters of mental performance. Hence, more qualified candidates can be selected for employment, thus reducing job stress, and increasing productivity.

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